

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method of determining geometrical data of a motor vehicle wheel mounted rotatably about an axis of rotation on a main shaft of a wheel balancing machine, in which a plurality of measurement points on the rotating wheel are scanned in contactless mode, the method comprising the steps of:

~~characterised in that~~ measuring, in at least two planes perpendicular to the axis of rotation, the spacings of a plurality of measurement points on a respective periphery of the corresponding part of the wheel from a reference location and the rotary angle positions of the respective measurement points, the measuring being carried out by a scanning light beam that has an unchanging direction at least during a revolution of the wheel; ~~are measured and [[that]] determining~~ the position of the motor vehicle wheel with respect to the axis of rotation is ~~determined~~ from the measurement values.

2. (currently amended) A method according to claim 1
~~characterised in that~~, wherein the position, in particular the eccentricity and/or the angle of inclination of the geometrical axis of the wheel, with respect to the axis of rotation, is or are determined from the measurement values.

3. (currently amended) A method according to claim 1
~~characterised in that~~, wherein the measurement points are scanned on a surface of the part of the wheel, which is substantially parallel to the axis of the wheel, and/or a surface of the part of the wheel, which is substantially inclined or perpendicular.

4. (currently amended) A method according to claim 1,
~~characterised in that~~ wherein a lateral wobble (run out) and/or radial wobble (run out) on the wheel is or are ascertained from the measurement values.

5. (currently amended) A method according to claim 1,
~~characterised in that~~ wherein the measurement points are scanned on parts of the wheel of the inside of the wheel and/or the outside of the wheel and/or at the periphery of the wheel.

6. (currently amended) A method according to claim 1,
~~characterised in that~~ wherein the position ascertained from the measurement values, in particular eccentricity and/or inclination of the geometrical axis of the wheel with respect to the axis of rotation is or are used for correction of balancing parameters (balancing mass, angular position) which are ascertained in an unbalance measuring operation.

7. (currently amended) A method according to claim 4,
~~characterised~~ wherein by ascertaining the run out data of the rim and the unbalance data of the vehicle wheel in a first positional relationship of the [[tyre]] tire and the rim, and by matching the rim and the [[tyre]] tire in a second positional relationship to minimize the effects of the run out of the rim and of the unbalance of the vehicle wheel.

8. (currently amended) A method of determining geometrical data of a motor vehicle wheel mounted rotatably about an axis of rotation, in which a plurality of measurement points on the rotating wheel are scanned in contactless mode, in particular according to claim 1,
~~characterised in that~~ wherein the spacings of measurement points on the pneumatic [[tyre]] tire of the motor vehicle wheel and in particular on one or more peripheral lines about the axis of rotation, relative to a reference location, are measured at different inflation pressures.

9. (currently amended) A method according to claim 8 ~~characterized by, further~~ including ascertaining the run out data of the rim and the stiffness data of the [[tyre]] tire in a first positional relationship of the [[tyre]] tire and the rim, and [[by]] matching the rim and the [[tyre]] tire in a second positional relationship to minimize the effects of the run out of the rim and of the difference of stiffness around the circumference of the [[tyre]] tire.

10. (currently amended) A method according to claim 9
~~characterised in that tyre, wherein~~ tyre irregularities, in particular ~~[[tyre]]~~ tyre stiffness values, in the peripheral direction of the pneumatic ~~[[tyre]]~~ tyre, are ascertained from the differences in the spacing measurement values for the respective measurement points.

11. (currently amended) Apparatus for determining geometrical data of a motor vehicle wheel (2) mounted rotatably about an axis of rotation (1) on a main shaft of a wheel balancing machine, comprising a contactless scanning device (3) connected to a spacing measuring device (4) which measures, with a scanning light beam, the spacing of a measurement point scanned on the wheel (2) from a reference location (5), and an evaluation device (7) which evaluates the measurement values,

~~characterised in that, wherein~~ a rotary angle sensor (6) for determining the respective rotary angle positions of the scanned measurement points during rotation of the wheel about the axis of rotation (1) is connected to the evaluation device (7), and ~~[[that]]~~ the evaluation device (7) has a computer which ~~from the spacings of the measurement points from the reference location (5) and the respective rotary angle positions of the measurement points which are on at least two peripheries on parts of the wheel, which peripheries are in planes (19, 20) perpendicular to the axis of rotation (1), determines the position of the motor vehicle wheel (2) and in particular the position of the geometrical axis (8) of the wheel with respect to the axis of rotation (1) from the spacings of the measurement points from the reference location (5) and the respective rotary angle positions of the measurement points which are on at least two peripheries on parts of the wheel, which peripheries are in planes (19, 20) perpendicular to the axis of rotation (1), a direction of the scanning light beam remaining unchanged at least during a revolution of the wheel.~~

12. (currently amended) Apparatus according to claim 11
~~characterised in that, wherein~~ the scanning device (3) and the spacing measuring device (4) form a movable spacing measuring unit (10; 11; 12).

13. (currently amended) Apparatus according to claim 12
~~characterised in that~~, wherein the spacing measuring unit (10; 11; 12) is in the form of a triangulation measuring device.

14. (currently amended) Apparatus according to claim 11,
~~characterised in that~~ wherein there are provided three spacing measuring units (10; 11; 12) of which respective spacing measuring units are directed on to the inside of the wheel, the outside of the wheel and the peripheral surface of the wheel.

15. (currently amended) Apparatus according to claim ~~[[11]]~~ 14,
~~characterised in that~~ wherein the spacing measuring units (10; 11) directed on to the inside of the wheel and the outside of the wheel are mounted pivotably.

16. (currently amended) Apparatus according to claim ~~[[11]]~~ 14,
~~characterised in that~~ wherein the spacing measuring unit (12) directed on to the peripheral surface of the wheel is mounted ~~movably~~ so as to be displaceable parallel to the axis of rotation (1).

Claim 17 (canceled).

18. (currently amended) Apparatus according to claim ~~[[1]]~~ 11,
~~characterised in that~~ wherein the rotary angle sensor (6) is non-rotatably coupled to the motor vehicle wheel (2).